Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Entergy Louisiana LLC
Entergy Louisiana LLC - Waterford 1&2 Generating Plant
Killona, St. Charles Parish, Louisiana
Agency Interest Number: 83898
Activity Number: PER20070001
Proposed Permit Number: 2435-V2

I. APPLICANT

Company:
Entergy Louisiana LLC
17705 River Rd
Killona, Louisiana 70066

Facility:
Entergy Louisiana LLC- Waterford 1&2 Generating Plant
17705 River Rd
Killona, St. Charles Parish, Louisiana
Approximate UTM coordinates are 743.50 kilometers East and 3320.70 kilometers North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS

Waterford 1 & 2 Electric Generating Plant is an existing fossil-fueled steam/electric generation facility. The facility currently operates under Permit No. 2435-V1 issued June 30, 2004; and Acid Rain Permit 2435-IV1 issued September 28, 2005.

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application and Emission Inventory Questionnaire were submitted by Entergy Louisiana LLC on April 19, 2007 requesting a Part 70 operating permit. The application was subsequently revised on July 9, 2007.

Project

Waterford 1 & 2 is a fossil-fueled steam/electric generating facility. The plant consists of three generating units. Unit 1 boiler uses natural gas as its primary fuel and No. 6 fuel oil as its secondary fuel, and has a maximum heat input of 4,400 (gas)

and 3,920 (oil) MM BTU per hour. Unit 2 boiler uses natural gas as its primary fuel and No. 6 fuel oil as its secondary fuel, and has a maximum heat input of 4,400 (gas) and 3,920 (oil) MM BTU per hour. The auxiliary heating boiler burns only natural gas and has a maximum heat input of 77 MM BTU per hour. There are three No. 6 fuel oil storage tanks on site.

With this modification, a 36 megaWatt dispatching turbine, a 300,000 gallon diesel tank, and a 364 hp diesel generator will be added. The maximum hourly emission rates and HAP emission rates for existing sources will be reconciled. The name of the fuel oil heating boiler will be changed to auxiliary heating boiler. The sulfur dioxide and nitrogen oxide emissions from the dispatchable turbine will be capped at 39 tons per year each.

Proposed Permit

Permit 2435-V2 will be the modification of Part 70 operating permit 2435-V1 for the Waterford 1 & 2 Electric Generating Plant.

Permitted Air Emissions

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	1,471.79	2089.07	+617.28
SO_2	37,175.00	37,214.01	+39.01
NO_X	11,707.32	11,746.32	+39.00
CO	3,467.75	3,540.87	+73.12
VOC	227.26	227.75	+0.49

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

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Applicability and Exemptions of Selected Subject Items

ID No.	Requirement	Note
GRP6 & GRP7 Units 1 & 2	40 CFR 63 Subpart B Requirements for Control Technology Determinations for Major Sources in Accordance With Clean Air Act Sections, Sections 112(g) and 112(j)	DOES NOT APPLY. Steam generating units were constructed prior to the effective date of CAA §112(g)(2)(B) (June 29, 1998) and the effective date of Louisiana's Title V permit program (October 12, 1995). §63.40(b)
	40 CFR 64 Compliance Assurance Monitoring	EXEMPT per 64.2 (b)(1)(iii)
	40 CFR 60 Subpart D Standards of Performance for Fossil-Fuel-Fired Steam Generators	EXEMPT. Units were constructed prior to August 17, 1971, and have not been modified.
	Comprehensive Toxic Air Pollutant Emission Control Program [LAC 33:III.5105.B.3]	EXEMPT. Fires Group 1 virgin fossil fuels and Group 2 virgin fossil fuels from a stack that has downwash minimization or approved height.
EQT 13-EQT 15 Storage Tanks	NSPS Subpart K – Standards of Performance for Storage Vessels for Which Construction, Reconstruction, or Modification Commences after June 11, 1973 and Prior to May 19, 1978. [40 CFR 60.110]	DOES NOT APPLY. Storage tanks do not store petroleum liquids. Tanks constructed in 1974.
	NSPS Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984. [40 CFR 60.110b]	DOES NOT APPLY. Storage tanks were constructed prior to July 23, 1984, and have not been modified.

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EQT 13-EQT 15 Storage Tanks	Storage of Volatile Organic Compounds [LAC 33:III.2103]	DOES NOT APPLY. Vapor pressure is less than 1.5 psia.
GRP 8 Dispatching Turbine	Emission Standards for Sulfur Dioxide Continuous Emissions Monitoring [LAC 33:III.1511.A]	EXEMPT. Units emit less than 100 tons of SO_2 per year.
	Emission Standards for Sulfur Dioxide Emissions Limitations [LAC 33:III.1503]	EXEMPT. Units emit less than 100 tons of SO_2 per year.
	Comprehensive Toxic Air Pollutant Emission Control Program [LAC 33:III.5105.B.3]	EXEMPT. Fires Group 1 virgin fossil fuels and Group 2 virgin fossil fuels from a stack that has downwash minimization or approved height.
EQT 18 Fuel Storage Tank	NSPS Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984. [40 CFR 60.110b]	DOES NOT APPLY. Storage tank capacity > 39890 gals with a vapor pressure < 0.51 psia
	Storage of Volatile Organic Compounds [LAC 33:III.2103]	DOES NOT APPLY. Vapor pressure is less than 1.5 psia.

Prevention of Significant Deterioration/Nonattainment Review

The addition of the new dispatching turbine has potential emissions greater than the PSD trigger limitations for NO_X and SO_2. The facility is complying with a federally enforceable condition to limit the emissions of those two pollutants to remain below the applicability threshold for PSD. The federally enforceable condition includes operation of the turbine and both the permitted and the emergency operation of the supporting diesel generator. The increase in PM_{10} emissions is due to changes in emission factors. Therefore, the proposed facility is not subject to the requirements of PSD.

MACT Requirements

The power station is subject to NESHAP YYYY.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

There is no permit shield.

VI. PERIODIC MONITORING

Units C1 and C2 are equipped with a continuous emissions monitoring system (CEMS) as required by 40 CFR 75. The emissions and opacity data is recorded every hour that fuel is combusted.

The new dispatching turbine is required by NSPS 40 CFR 60 Subpart KKKK to provide continuous monitoring of NO_X and SO_2. The two available options are using CPMS or CEMS. Due to the federally enforceable limitations for the new turbine being established at 39 tpy, the facility will be required to install and operate using the CEMS option.

VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H_2S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

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New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_X) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: $\geq$ 10 tons per year of any toxic air pollutant; $\geq$ 25 tons of total toxic air pollutants; and $\geq$ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10} – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulfur.

Sulfuric Acid (H_2SO_4) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.